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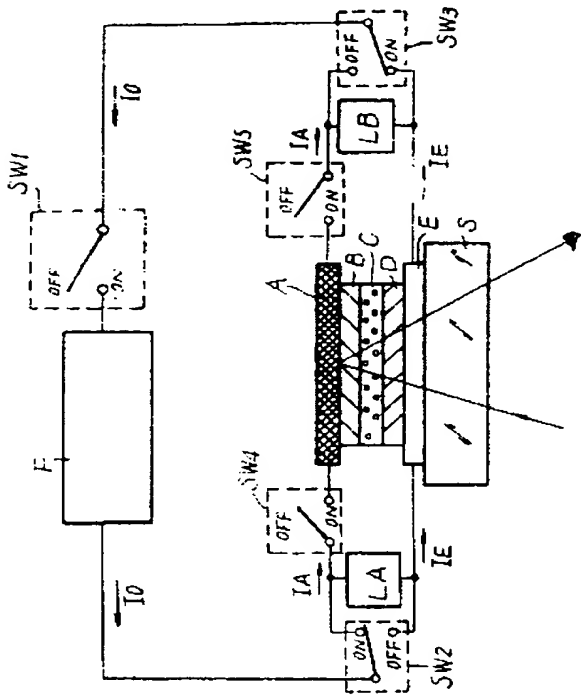
TITLE : ELECTROCHROMIC ELEMENT PROVIDED WITH HEATING CIRCUIT



ABSTRACT : PURPOSE: To improve the response speed in low-temp. environment and to prevent dimming by providing a heating circuit which generates heat by passing electric current to a lower electrode or upper electrode which sandwiches an electrochromic layer and at least one of which is a transparent electrode.

CONSTITUTION: For example, an antidazzle mirror which ECD is formed of a transparent glass substrate S on the front, thin ITO film E as the transparent lower electrode, thin film D as an oxidation colorable EC layer, thin film C as a transparent ion conductive layer, a thin film B as a reduction colorable EC layer and the upper electrode layer A in common use as a reflecting layer. Heat is generated in the electrode A when the electric current passes thereto from a low-voltage power source F via a switch SW2, level shift circuit LA and SW4. On the other hand, the heat is generated in the electrode E as well as the current flows to said electrode as well. As a result, the EC layers B, D are warmed, by which the response speed in the low-temp. environment is improved. The substrate S is also warmed and the dimming can be prevented even if the substrate S contacts with the moist and warm air in the low-temp. environment. The colored state is maintained even if the SW1, 3, 5 are turned off after the coloring.